

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-6 (Canceled)

7. (Currently Amended) A method of transmitting signals using a plurality of transmit channels, the method comprising:

allocating the data to be transmitted among the plurality of transmit channels, wherein at least one of the plurality of transmit channels transports some data that is not transmitted over all of the other of the plurality of transmit channels; and

transmitting a modified preamble from each of the plurality of transmit channels, wherein the modified preamble is distinguishable at a receiver from a conventional 802.11a preamble and includes information in an out-of-band component unused in a conventional 802.11a preamble.

8. (Original) The method of claim 7, wherein the plurality of transmit channels comprise a plurality of frequency channels.

9. (Currently Amended) The method of claim 8, wherein the ~~plurality of frequency channels are~~ the out-of-band component comprises a frequency band at the junction of adjacent 20 MHz channels comprising a portion of each channel that is attenuated by conventional 802.11a communication devices.

10. (Currently Amended) A method of transmitting signals using a plurality of transmit channels, the method comprising:

allocating the data to be transmitted among the plurality of transmit channels, each transmit channel having a bandwidth corresponding to a legacy communication standard including a portion utilized for data transmission and an out-of-band portion including out-of-band subcarriers that are not used for data transmission by communication devices complying

with said legacy communication standard, wherein at least one of the plurality of transmit channels transports some data that is not transmitted over all of the other of the plurality of transmit channels; and

for at least one set of at least two adjacent transmit channels, transmitting data over the set wherein at least some data is encoded in out-of-band subcarriers at frequencies between frequencies allocated to the at least two adjacent transmit channels.

11. (Currently Amended) In a communications system having a channel divided into a plurality of adjacent frequency bands separated by out-of-band frequency ranges, wherein data is transmitted within the bands of the plurality of frequency bands, a method of increasing data capacity of the channel comprising:

for data to be transmitted from a transmitter, allocating a first portion of the data among the plurality of transmit frequency bands and allocating a second portion of the data to at least one out-of-band frequency range when the first portion is allocated to adjacent bands, wherein the at least one out-of-band frequency range includes an out-of-band frequency range between the adjacent bands that is attenuated by legacy devices operating in the communication system;

transmitting the first portion of the data within the plurality of transmit frequency bands;
and

transmitting the second portion of the data within the at least one out-of-band frequency range.

12. (Currently Amended) The method of claim 11, further comprising:

prior to transmitting at least the second portion of the data, transmitting one or more training symbols usable for a receiver to estimate transmission characteristics of the out-of-band frequency ranges; and

using received signals of the one or more training symbols to modify processing of a received signal corresponding to the second portion of the data to account for the transmission characteristics of the out-of-band frequency ranges.

Claims 13-50 (Canceled)

51. (Currently Amended) A method of transmitting an extended mode packet intended for extended 802.11 receivers in a wireless medium, the method comprising:

transmitting a modified preamble, the modified preamble comprising data transmitted on subcarriers considered out-of-band subcarriers and unused for data transmission by conventional 802.11a receivers, the modified preamble comprising a plurality of fields decodable by a conventional 802.11a receiver such that a conventional 802.11a receiver that receives the packet can detect the packet or defer processing for a time corresponding to a remainder of the length of the packet; and

transmitting a remainder of the extended mode packet.

52. (Currently Amended) The method of claim 51, wherein said transmitting the modified preamble comprises transmitting the modified preamble over a 40 MHz channel comprising two adjacent 20 MHz channels, and

wherein the out-of-band subcarriers comprises subcarriers ~~between~~ at adjoining edge portions of the adjacent 20 MHz channels that are attenuated by conventional 802.11a devices.

53. (Previously presented) The method of claim 51, wherein the out-of-band subcarriers comprise subcarriers in addition to the 52 non-zero subcarriers utilized by conventional 802.11a receivers for 20 MHz transmission.

54. (Previously presented) The method of claim 51, wherein said transmitting the remainder of the extended mode packet comprises transmitting the remainder of the extended mode packet using said out-of-band subcarriers.

Claims 55-62 (Canceled)

63. (New) The method of claim 10, wherein the legacy communication standard is IEEE 802.11a and the adjacent transmit channels comprise adjacent 20 MHz transmit channels.